

strayed in from Bahawalpur (Pakistan) into the former Bikaner State area (Singh 2001).

The sighting of the globally threatened Indian wild ass from Bhawatra, Jalore district in Rajasthan can be attributed to the increase in its population in the Wild Ass Sanctuary in the Little Rann of Kutch during the last two decades. According to Singh *et al.* (1999), the Indian wild ass was restricted to the Sanctuary, and no animal was recorded beyond 5 km from the boundary in 1976. As the population increased, animals started moving away from the boundary. Most likely, the animals which had dispersed earlier to the Great Rann of Kutch from the Little Rann are now spreading further north into Rajasthan along the Pakistan border, as the area between Jalore and the Little Rann is heavily inhabited.

According to Singh *et al.* (1999), the present population of the wild ass in India is about 2,940; it will continue to increase in future and may exceed 4,000 by the year 2010. Therefore, further dispersal in suitable areas in the Rann can be expected in the future. This natural dispersal

process may be considered an opportunity by wildlife management authorities to expand existing habitats to the areas that were occupied by the animal in the not so distant past. It is in the interest of conservation of the species to develop the Rann area lying in Jalore and Barmer districts of Rajasthan as an alternative site to the Wild Ass Sanctuary. At present, there is no human activity in this area except for the presence of the Border Security Force (BSF) along the border with Pakistan.

ACKNOWLEDGEMENTS

I would like to thank Prabhsharan Singh Chhina for organising the survey and logistical support, and Divyabhanusinh for references and suggestions.

March 27, 2002 HARKIRAT SINGH SANGHA
B-27, Gautam Marg,
Hanuman Nagar,
Jaipur 302 021, Rajasthan

REFERENCES

- NAMEER, P.O. (2000): Checklist of Indian Mammals. Kerala Forest Department. Pp. 49-50.
- PRATER, S.H. (1980): The Book of Indian Animals. Bombay Natural History Society, Bombay. Pp. 227-228.
- ROBERTS, T.J. (1997): The Mammals of Pakistan. Revised Edn. Oxford University Press, Karachi. Pp. 228-232.
- SINGH, H.S. (2001): National Heritage of Gujarat. Gujarat Ecological Education and Research (GEER) Foundation, Gandhinagar. Pp. 205-207.
- SINGH, H.S., B.H. PATEL, V.C. SONI, N. SHAH, K. TATU & D. PATEL (1999): Ecological Study of Wild Ass Sanctuary. GEER Foundation, Gandhinagar. Pp. 205-207.
- STERNDALE, R.A. (1884): Natural History of the Mammalia of India and Ceylon. Thacker Spink & Co., Calcutta. Pp. 399-401.

3. RING RECOVERY FROM GREAT CORMORANTS *PHALACROCORAX CARBO* IN INDIA

(With one text-figure)

While staying at the Forest Rest House of the Pakhui Tiger Reserve at Seijusa in western Arunachal Pradesh during March-April, 1998, and September-October, 1999, I observed great cormorants *Phalacrocorax carbo* in the Pakke river. During the same period, I also had sightings of this species further west near Tipi, in the

Kameng or Bhareli river, a tributary of the River Brahmaputra. The cormorants were often observed moving up and down the river in small to large flocks, at times 25-30 birds in a flock. As both these localities occur close to the Assam plains, I thought the cormorants probably moved upstream from roosting areas in the plains to

Arunachal Pradesh for feeding. Little did I know then that these great cormorants included migrants from China.

The great cormorant, *Phalacrocorax carbo* Linn., is the most widely distributed species of Phalacrocoracidae. It is found from the Arctic to the Tropics in both inland and marine waters. One of its subspecies, *P.c. sinensis*, which is known to exhibit the most migratory behaviour (del Hoyo *et al.* 1992), occurs in India. It is seen throughout most of the Subcontinent, being resident and locally migratory, with a regular seasonal influx of extralimital migrants in winter augmenting the resident population (Ali and Ripley 1983, Grimmett

et al. 1998). There are a few ring recoveries of great cormorants (Fig. 1); birds that had been ringed in Kazakhstan suggest the origin of some of the birds that migrate to India (Abdulali 1976). The following account is the first direct evidence on the migration of great cormorants to India from China. For details of the ring recoveries see Table 1.

In December 1999, Mr. C. Loma, DFO, Pakhui Tiger Reserve at Sejusa in Arunachal Pradesh informed me of a bird ring he had collected from a local hunter and wanted me to ascertain the species and from where it had come. Soon after, in January 2000, while on a visit to Yazali locality in Lower Subansiri district of Arunachal Pradesh,



Fig. 1: Map showing great cormorant ringing and recovery sites

Table 1: Details of ring recoveries in eastern India of great cormorants from China and elsewhere

Ringing details		Recovery details			
Ring No.	Ringing date	Locality, Sex, Age	Recovery date	Locality	Remarks
N00-4541	June 13, 1999	36° 54' N, 99° 54' E Qinghai Hu, Qinghai Province, China. Sex: unclear, Age: nestling	First week of October 1999	c. 26° 57' N, 93° 1' E Ranganadhi river (Panior river), Yazali, Lower Subansiri district, Arunachal Pradesh	This ring was collected from a local hunter who had killed the bird for the pot. He reported seeing two birds in the river at the time of shooting.
N00-4947	June 19, 1999	36° 54' N, 99° 54' E Qinghai Hu, Qinghai Province, China. Sex: unclear, Age: nestling	First week of November 1999	c. 27° 34' N, 93° 44' E Pakke River, Seijusa (150 m); East Kameng district, Arunachal Pradesh	This ring was also collected from a local hunter who had killed the bird for the pot. The ring was collected by the First Department and shown to me in January 2000. Also a full wing of the bird kept as a trophy was collected.
N00-5013	June 17, 1999	36° 54' N, 99° 54' E Qinghai Hu, Qinghai Province, China. Sex: unclear, Age: nestling	April 3, 2000	c. 26° 20' N, 89° 29' E Torsa River, Near Suktabari, Cooch Bihar, West Bengal	This bird was caught alive by a fisherman and after seeing the ring, the bird was handed over to the Forest Department there. After removing the ring, this bird was released on April 5, 2000. (Source: Hillajyoti Singha and S. Sivakumar, BNHS).
Unknown	-	-	Unknown	Pappu Valley, Seppa, Kameng district, Arunachal Pradesh	A few local people reported seeing cormorants in September in the Pappu Valley and also reported having killed a bird with a ring. This ring, however, could not be located.
Unknown	-	-	Unknown	Garo Hills, Meghalaya	A hunter caught this bird and reported seeing a Russian ring. Unfortunately, the ring has been lost. The exact locality where the bird was caught is not known. (Source: Maan Barua from Kaziranga, Assam)

the Range Forest Officer there also informed me of a bird ring with a local hunter. We later collected the ring, and to our surprise found that the inscription was similar to the one collected in Seijusa, about 300 km away. Enquiry with the hunter yielded no information, except that he had seen two black birds together in the river when the ringed bird was shot.

On returning from Arunachal Pradesh, I learnt from Dr. Taej Mundkur, of Wetlands International – Asia Pacific, that the rings belonged to the National Bird Banding Centre (NBBC) in China. Ms Hou Yunqiu and Mr. Qian Fawen of NBBC were contacted, and they informed me that the rings belonged to great cormorants ringed at Qinghai Hu (Hu = Lake), Qinghai Province (36° 54' N, 99° 54' E), which is about 1,200 km as the crow flies from the localities in Arunachal Pradesh where the rings were recovered.

Further, when the recoveries were reported to the Bombay Natural History Society, I learnt that two researchers, Hillaljiyoti Singha and S. Sivakumar had also recovered a ring from a great cormorant on April 3, 2000. A fisherman had caught the bird in the Torsa river near Shuktabari, 17 km from Koch (Cooch) Bihar, West Bengal State. This ring also belonged to the NBBC and the bird was ringed at Qinghai Hu.

The subspecies *P.c. sinensis* is known to occur throughout China, and the northern breeding birds there are reported to winter south

of the Yangtze and on Hainan and Taiwan (Meyer De Schauensee 1984). With the ring recoveries of the Qinghai birds, it appears that some populations also winter in India, entering the Subcontinent via the eastern flyway across the Eastern Himalaya. Very little information is available on migration routes in Northeast India, but the Brahmaputra and its tributaries are thought to form a flyway for birds from Northeast Asia (Grimmett *et al.* 1998).

How far these birds move south is not known, but the majority of them could possibly be wintering in the Assam plains. The Kaziranga National Park, a Ramsar site along the river Brahmaputra, supports a large number of migratory birds. Great cormorants are found there throughout the year but the numbers are higher in winter, suggesting a definite migratory supplement (Maan Barua, pers. comm.). It is not clear whether the movement of these Chinese-ringed cormorants is an annual feature, or a dispersal or nomadic movement. Further studies and ring recoveries of great cormorants from the region are required to establish their movements.

August 10, 2001

R. SURESH KUMAR
Wildlife Institute of India,
Post Box # 18, Chandrabani,
Dehra Dun 248 001,
Uttaranchal, India.

REFERENCES

- ABDULALI, H. (1976): The occurrence of Russian-ringed large cormorants *Phalacrocorax carbo sinensis* (Shaw) in India. *J. Bombay nat. Hist. Soc.* 73(1): 212-213.
- ALI, S. & S.D. RIPLEY (1983): Handbook of the Birds of India and Pakistan. Oxford University Press, New Delhi. Vol. 1, pp. 37-39.
- GRIMMETT, R., C. INSKIPP & T. INSKIPP (1998): Birds of the Indian Subcontinent. Oxford University Press, Delhi. Pp. 558.
- DEL HOYO, J., A. ELLIOT & J. SARGATAL (EDS) (1992): Handbook of Birds of the World. Vol.1. Lynx Edicions, Barcelona. Pp. 326-353.
- MEYER DE SCHAUENSEE, R. (1984): The Birds of China. Smithsonian Institution Press, Washington, DC. Pp. 126.

4. RECOVERY OF A RINGED DEMOISELLE CRANE *GRUS VIRGO* IN KUTCH

During a routine survey in February, 1999, one of us (MHT) found a dead demoiselle crane,

Grus virgo Linn., on Ratnal Tank (23° 17' N, 70° 01' E) with the ring number Moskwa B-270 915.